

Current Land Development Code: Natural Resource Protection Standards

Where are these standards located?

Division 10-04-003 – Natural Resource Protection Standards

Division 10-04-004 – Site Capacity Calculations

Division 10-06-005 – Tree Preservation and Protection

When is resource protection required?

Resource protection is required for both residential and nonresidential developments in the new zoning districts (added in 1991) only. Levels of protection for a development are determined through a complex calculation involving resource type, zoning district protection factors, and the total acres of land containing a resource.

Resource Types:

- Rural and Urban Floodplains (1st priority protection)
 - Rural floodplains consist of land within those 100-year floodplains that cannot be altered through floodplain map revision or amendment and must remain essentially undisturbed. Rural floodplains have a protection factor of 1.0 in all zoning districts, which means that they are 100% protected.
 - Urban floodplains consist of land within the 100-year floodplain, and are not protected as a resource.
 - Floodplains are determined from floodplain maps.
- Steep Slopes (2nd priority protection)
 - Slopes are divided into two categories, "17-24.9%" and "25% and over".
 - Each slope category has different protection factors for different zoning districts.
 - Slopes are determined through a calculation involving topographic maps and/or field surveys.
 - Typically slopes are protected at 60-80% levels.
- Forests (3rd priority protection)
 - To qualify as a forest area, a site must include one or more trees with a Diameter at Breast Height (DBH) of six inches or more. Each forested area includes the tree trunk and the area within the drip line or tree canopy.
 - Forest resources have different protection factors in different zoning districts; e.g. 50% in residential zones and 30% in commercial zones, but exceptions apply for Affordable Housing.

The calculation of total resource land to be protected involves multiplying the total acres of land containing the resource by the appropriate protection factor.

The current code also provides for sampling of forest resources for sites over 5-acres.

One of the issues with the current resource calculation methodology is that the calculations focus only on the total number of trees expressed as area of tree canopy on a development site, and there is no consideration for the health, location, quality, etc. of the tree resources on the site. Additionally, resources that overlap each other are counted individually, and credit is not applied when for example, forest resources overlap with an area of steep slopes (except for affordable housing developments using the Planned Option).

Slope and Forest Mitigation:

Under certain limited circumstances, usually related to site development constraints, the Planning and Zoning Commission may require any of the following:

- Planting of additional landscaping to replace trees lost in other areas.
- Alteration of building configurations and types to preserve resources.
- Mitigation through off-site plantings or off-site preservation of existing forest resources to account for resources disturbed by development.

Tree Preservation and Protection:

In a separate Division (actually located in the Landscape Chapter) from the other resource calculation provisions, standards are provided to allow for the removal of trees and to protect trees during construction.

New Zoning Code:

Resource Protection Standards:

Where are these standards located?

Division 10-50.90 -- Resource Protection Standards

Purpose

Provides standards for the protection of natural resources (floodplains, steep slopes and forests). The division is a much simpler version of the existing standards, and it is intended to provide as much protection of natural resources as the existing code. The existing Flagstaff Fire Department procedures for maintaining forest health are included in the division.

Applicability - When is resource protection required?

Resource protection is required for proposed land uses and development within the Resource Protection Overlay (RPO) Zone. The RPO only applies to the existing "new" zoning districts added to the Land Development Code in 1991. The RPO will apply following the Flagstaff Fire Department's (FFD) implementation of the Flagstaff Wild Land Urban Interface Code (WUI) and the Flagstaff Fire Department's Forest Stewardship Plan.

Resource Types:

- Urban and Rural Floodplains (1st priority protection)
 - Rural floodplains consist of land within those 100-year floodplains that cannot be altered through floodplain map revision or amendment and must remain essentially undisturbed. Rural floodplains are 100% protected.
 - Urban floodplains consist of land within the 100-year floodplain, and are not protected as a resource.
 - Floodplains are determined through floodplain maps.
- Steep Slopes (2nd priority protection)
 - Steep slopes are divided into three categories, "17-24.9%", "25 – 34.9%" and "35% and greater".
 - No development is permitted on slopes 35% and greater, but they can be used as a resource protection area.
 - Slopes are determined through a calculation involving topographic maps and/or field surveys.
- Forest (3rd priority protection)
 - Ponderosa Pines and forests.
 - Native trees and forests (other than Ponderosa Pines).

The calculation of total resource land to be protected involves multiplying the total acres of land containing the resource by the appropriate protection factor.

The division also provides for sampling of forest resources for sites over 5-acres.

Resources Survey Requirements

A Resources Survey is required to help ensure that the requirements of the new Division are met and that the highest quality resources are protected. Elements to be included in the Resources survey include topographic analyses, mapping of natural communities, descriptions of ecological value of the forest resources (ponderosa pines and other trees), a determination of areas most suitable for natural resource retention and protection, and mitigation and replacement strategies if needed. Details are also provided on the qualifications needed for the preparer of the resource survey.

The essential purpose of the resource survey is to shift the approach to resource preservation from one based on the “quantity” of resources to a one based on the “quality and location” of the resources.

Resource Protection Thresholds:

This is the minimum area that must be set aside for natural resources, including floodplains, steep slopes and forest. Resources are determined through a resources survey, which establishes the quality and priority for resource protection.

- For the purpose of resource calculation, zones are divided into TND, Residential, Commercial and Industrial. Each of the resources must be protected at a certain percentage, which is a set number for each individual zone.
- Resource protection thresholds have been established in the draft, but they will be tested against existing projects that have been reviewed, approved and/or constructed under the existing resource protection thresholds of the LDC. Based on this empirical testing, staff and the consultants will be able to determine if additional amendments to the resource protection thresholds are required.

Natural Resources Protection Plan

A Natural Resources Protection Plan is required to be submitted with the grading plan, that shows all natural resource areas, limits of land disturbance, clear-cutting, grading and other required resource protection details for the site.

Resource Protection During Construction

Natural resources to be preserved on a site shall be protected before land disturbance begins, using methods such as fencing, tree wells and root protection. More precise and detailed standards for protecting resources are provided than are found in the existing LDC.

Uses Allowed in Natural Resources Areas

A number of low-impact uses are identified that are permitted in certain resource protection areas, which include pasture, active/passive recreation, utilities and use as landscape buffers and drainage. This section is currently in the LDC. However, staff has suggested that as an alternative to keeping it in the Resources Division of the new zoning code, that these uses be included in the Use Tables of Chapter 10-40 and the Specific to Uses Division.

Replacement and Mitigation

Under certain circumstances, usually related to site development constraints, the Director may allow up to a 5% modification of resources to be protected. The Planning and Zoning Commission may further allow the following modifications:

- Planting of additional landscaping to replace trees lost in other areas.
- Mitigation through off-site plantings or off-site preservation of existing forest resources to account for resources disturbed by development.
- The Commission may require alternative development practices including the tunneling of utilities, placing all utilities under the street, stepping foundations, etc.

Note that additional work is needed to identify the requirements for replacement of tree resources deliberately removed from a site either before or during construction.

Summary of the Main Differences between the Current LDC and New Zoning Code:

1. A Resource Protection Overlay will be implemented in the new code. It will consist of all zoned property requiring resource protection from the existing code. The RPO is needed to define where resources should be protected because the “Established” (E) zones and “new” zones are being combined.
2. New code indicates that resource protection will apply following the Flagstaff Fire Department’s (FFD) implementation of the Flagstaff Wild Land Urban Interface Code (WUI) and Forest Stewardship Plan, and in coordination with the FFD.
3. Categorization of steep slopes will be expanded through the addition of a 3rd category, “35% and greater”.
4. In the new code the focus will be more on quality of resources protected and their location on a site, rather than simply the quantity of total forest resources.
5. Resource protection thresholds while probably be consistent with the existing LDC, but while be applied differently (pending the completion of testing of the new standards with the existing standards). For example, resources that overlap each other will now be counted together, and not separately as is the case in the LDC. Also, one threshold for all categories is proposed, but this is still subject to testing against existing developed projects and thus changes may be forthcoming.
6. The new code includes revised sections (more comprehensive) detailing requirements for a resource protection plan and the protection of resources during construction. Note the existing code lists these requirements in the landscaping section.
7. The existing LDC only considers ponderosa pines as a forest resource. The new resources division may also include other native tree species such as cottonwood, juniper, pinion, etc.

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